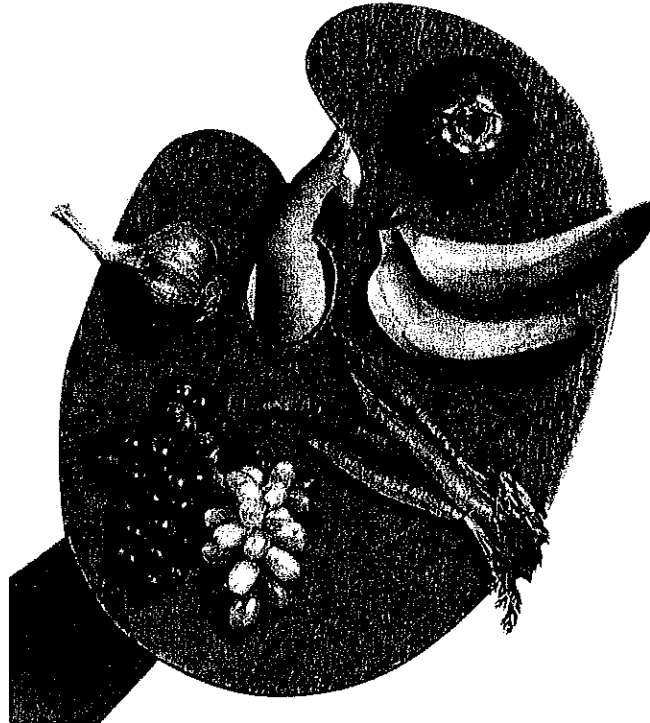


Explorer's Guide

# The Taste of Color

*Should you trust your eyes  
or your sense of taste?*

What color do you expect a juicy, sweet strawberry to be? Would you like to eat a blue banana? What do you think purple orange juice would taste like? Would green meat be safe to eat? Explore the connection between the color of food and your perception of its taste.



## Things You Will Need

- ▲ paper plate
- ▲ fork or toothpick
- ▲ napkins
- ▲ access to 3 different flavors of gelatin
- ▲ glass of water
- ▲ paper for recording observations

## To Do and Notice

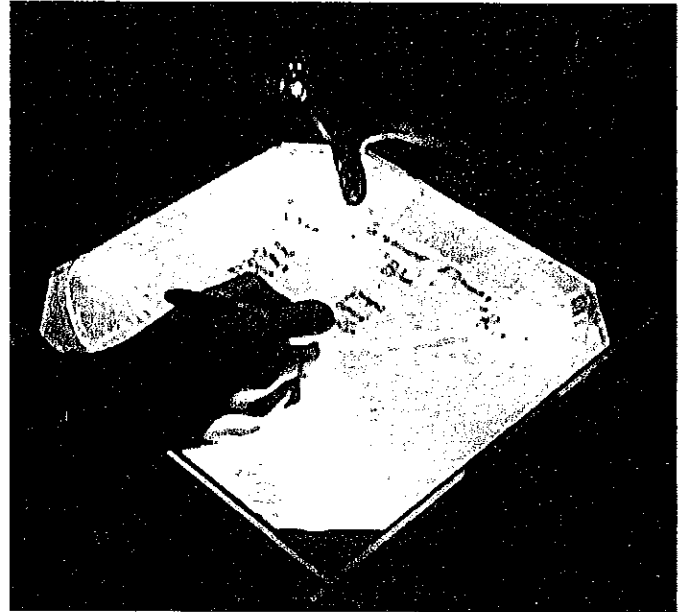
This activity works best with a facilitator.

To keep this activity fun and suspenseful, don't discuss your results with anyone until you have recorded them! Each gelatin cube may or may not be the flavor that its color suggests. Don't let anyone else influence your "flavor vote."

You may want to prepare a table for your observations before you begin. Read through the steps below to determine the columns and rows your table should have.

- 1 Obtain a cube of one of the three flavors of gelatin. Note whether it is A, B, or C. Observe the cube and record its color.

- ② Predict what the cube will taste like based on its color. Record your prediction.
- ③ Taste the gelatin cube and determine its flavor. Record the flavor you perceive.
- ④ Rinse your mouth with a little water and swallow before you taste the next sample.
- ⑤ Repeat steps 1–4 for the two other flavors of gelatin.
- ⑥ Find out the “true” flavor of each gelatin sample. Is each one the flavor you thought it was?



### Interpreting Your Observations

What flavor did you expect each gelatin cube to be? Why did you anticipate that flavor? Did the flavor you tasted agree with your expectation, or did you taste a different flavor? Based on your observations, what can you conclude about the influence of our experiences on how we “taste” different foods?

# The Taste of Color

## Materials

### *for the whole group*

- ▲ 3 flavors of gelatin dessert
- ▲ food coloring (at least 2 different colors)
- ▲ paper plates for serving
- ▲ plastic forks, toothpicks
- ▲ tongs, spoons, or forks for serving gelatin
- ▲ napkins
- ▲ drinking water
- ▲ glasses

### *for each individual*

- ▲ paper plate
- ▲ fork or toothpick
- ▲ napkins
- ▲ access to 3 flavors of gelatin
- ▲ glass of water
- ▲ paper for recording observations

## Management

- ▲ Amount of time for the activity: 30 minutes
- ▲ Preparation time: 30 minutes
- ▲ Group size: 1

## Preparation and Setup

### Activity Overview

Cubes of gelatin have been prepared so that their colors may not correspond to their flavors in the expected way. The flavors perceived when the gelatin's eaten illustrate how visual cues can influence sensory perception.

### Concepts

- › Because we learn to connect the taste of food to its color and appearance, certain visual cues create taste expectations.
- › Expectations of taste, based on prior experience, can influence the perception of taste.

### Preparation

- ① Obtain the gelatins and other materials. Regular gelatin with sugar works best; if you use sugar-free gelatin, the taste of the sweetener may be evident. Each 6-oz package of gelatin makes enough gelatin for a group of about fifty.
- ② Prepare the gelatins as directed on the packages. While still liquid, add food coloring to alter the color of two of the three flavors of gelatin (e.g., add red coloring to lemon gelatin). Label the three batches of gelatin A, B, and C, and record the (altered) color and flavor of each.
- ③ When the gelatin is set, cut it into 2–3 cm cubes—at least one cube of each flavor per explorer. Transfer the cubes into labeled plastic containers for transport. Keep refrigerated until used.
- ④ Set out the gelatin at three stations labeled A, B, and C.

### Questions for Getting Started

- › What is the flavor of a red soda? A brown piece of cake? A green hard candy? Why do you think so? What other colors do you associate with particular flavors?
- › Have you ever expected to taste something sweet and discovered it was sour or bitter? What was it? Were you surprised? Why?

## After the Exploration

### Expected Results

Most investigators will perceive the same flavor that they predict from the gelatin's color, even for the two gelatins with altered colors. Typically, a few investigators will overcome their preconceptions and discern the true flavor of one or both of the altered gelatins.

### What's Going On?

The connections we make between the color or appearance of food and its flavor are reinforced on a daily basis; it is rare to encounter a food that does not agree with our expectation of its taste.

When it is possible that at least one of the gelatins may be the flavor its color suggests, you do not know to expect a contradiction; you rely on visual cues, then taste and smell (an intimate part of taste) to determine flavor. Though some of the flavors may be distinct, your expectations of flavor based on color are typically strong enough to influence how you perceive the gelatin's taste.

### Discussion Questions

- ❶ Do you know of any foods that have color added while they are being processed? Why do you think the color is added?
- ❷ Sometimes a change in the color of food is a sign that the food isn't safe to eat. What are some of these foods and their color changes?

### Going Further: Ideas for Inquiry

- › Examine the ingredient labels on a variety of packaged foods at home or at the market to find out how many have added color.
- › Conduct a similar activity with foods or drinks that have different flavors but have the same color or are colorless (e.g., flavored, clear mineral waters).
- › Do people from different cultural backgrounds have the same preconceived notions about relationships between color and flavor? Design and conduct experiments to find out.

## The Basics and Beyond

### Background

We learn to associate certain colors of foods with particular flavors. Yellow food foretells a lemony flavor; green fruit is likely to be unripe. Because many of these associations are so reliable, we may actually perceive the flavor we expect, rather than the "real" flavor.